

**PHASE 5
TASK COMPLETION REPORT
FOR 2011 CONSTRUCTION SEASON**

RICHARDSON FLAT TAILINGS SITE

EPA SITE ID: UT980952840

November 1, 2011

Prepared for:

**United Park City Mines
P.O. Box 1450
Park City, UT 84060**

Jim Fricke

Prepared by: _____
Jim Fricke
Resource Management Consultants

Date: 11-01-2011

Kerry Gee

Reviewed by: _____
Kerry Gee
United Park City Mines Company

Date: 11-01-2011

Kathryn Hernandez

Reviewed by: _____
Kathryn Hernandez
USEPA Remedial Project Manager

Date: 11-03-2011

Muhammad A. Slam

Reviewed by: _____
Mo Slam

Date: 11-07-2011

State of Utah, Department of Environmental Response and Remediation

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P.O. Box 1450
Park City, UT 84060**

Prepared by:

**Resource Environmental Management Consultants, Inc. d.b.a. RMC
8138 South State Street, Suite 2A
Midvale, Utah 84047**

**Phone: (801) 255-2626
Fax: (801) 255-3266**

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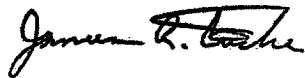
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1.0 INTRODUCTION

This Task Completion Report (TCR) details the work completed for the Phase 5 2011 Construction Season at Richardson Flat, ID UT980952840, located approximately two miles northeast of Park City, Utah. Phase 5 remedial features are presented in Figure 1-1. The remedy selected by United States Environmental Protection Agency (EPA) at the Richardson Flat Tailings Site (Site) was split into Tasks to facilitate remedy completion and bond release procedures. Phase 5 activities encompass Tasks 8 and 12 (Figure 1-1) as presented in the Remedial Design and Remedial Action Work Plan (RD/RA, RMC 2007a).

This is the fifth TCR submitted to EPA. The work outlined in this TCR represents a portion of the fifth phase of construction. Each of the first four phases consists of individual or groups of tasks to be completed in a single construction season. The work presented in this TCR was completed in a single construction season. The TCR for Task 1 was submitted to and approved by EPA on July 16, 2008. The TCR for Phase 2 (2008 Construction Season) was submitted to EPA on September 23, 2008 and approved by EPA on October 30, 2008. Task 1 and Phase 2 consisted of the first of five tasks of construction at Richardson Flat as outlined on Figure 10.2 of the RD/RA. The TCR for Phase 3 (2009 Construction Season) was submitted to EPA on November 17, 2009 and approved by EPA on November 22, 2009. The Task Completion Report (TCR) for Phase 4 was submitted to EPA on November 1, 2010 and approved by EPA on November 15, 2010.

A full description of Site background, investigative history, specifications, health and safety, design elements, project management and construction procedures are presented in the Remedial Design and Remedial Action Work Plan (RD/RA, RMC 2007a).

1.1 Work Performed

Work performed in the Phase 5 2011 Construction included:

Task 8 - Embankment Wetland:

- 1) Contaminated sediment removal was conducted in the Embankment Wetland. This activity resulted in the removal of approximately 46,000 cubic yards of contaminated material. Contaminated sediments were placed in Areas F-2 and F-3 of the Impoundment.
- 2) The area was graded to optimize surface water flow for wetland restoration.
- 3) Two areas of woody vegetation were left undisturbed. These areas will provide stock for the recovery of woody vegetation.
- 4) Clean fill was placed in the transitional areas adjacent to State Route 248, the Rail Trail and the two areas of woody vegetation described above. The clean fill was placed to create a smooth transition between areas of sediment removal and the remaining woody vegetation. Clean fill was also used for surface water flow control and for the formation of islands of upland habitat within the wetland area. Approximately 15,000 cubic yards of clean fill was used.
- 5) Confirmation sampling was conducted to ensure that sediment removal was complete.
- 6) Wetland restoration consisted of grading and revegetation with appropriate plant species.
- 7) Where needed, topsoil was placed in accordance with the RD/RA work plan. Topsoil in the remediated areas was salvaged and used or left in place where possible.

Task 12 - F-2 and F-3:

- 1) Approximately 46,000 cubic yards of contaminated materials were placed in F-2 and F-3. The materials were generated by sediment removal in the Embankment Wetland. No other contaminated material was brought into Richardson Flat during 2011 from any location.
- 2) Temporary cover was placed on this material. It is anticipated that materials from future remediation efforts in the Silver Creek Watershed will be placed in these areas.

1.1.1 Soil Specifications

As required by the RD/RA, cover soil and topsoil placed in upland areas contained less than 500 parts per million (ppm) lead and 100 ppm arsenic; and cover soil and topsoil placed in wetland areas, including the Embankment Wetland, contained less than 310 ppm lead. Cover and topsoil materials were generated from existing on-Site stockpiles for remedial work conducted in 2011. Clay cover soils were generated from stockpiles located onsite that have been confirmed during previous construction seasons as containing less than 500 ppm lead and 100 ppm arsenic. Topsoil was generated from a stockpile located onsite, but outside of the Study Area boundary, that has been confirmed during previous construction seasons as containing less than 310 ppm lead.

2.0 WORK PROCEDURES

Work was conducted according to procedures presented in the Phase 5 Field Construction Plan (FCP) for the 2011 Construction Season. The 2011 FCP was submitted to EPA and approved on June 7, 2011 and June 9, 2011 respectively.

2.1 2011 Work Activities

Phase 5 2011 work activities in the Embankment Wetland and F-2/F-3 areas consisted of:

- Source removal;
- Placement and grading of low permeability cover soil, where required;
- Channel reconstruction, where required;
- Wetland construction, where required;
- Placement of topsoil, where required;
- Wetland and upland revegetation; and
- Covering of contaminated material generated during this construction.

The majority of remedial activity at the Site in 2011 consisted of removing contaminated sediments from the Embankment Wetland and reconstruction of the area to increase clean wetland habitat for compensating potential Natural Resource Damages (NRD). Figure 1-1 presents work completed in 2011 in this area. Contaminated sediments were placed in areas F-2 and F-3. A temporary cover of clean soil was placed in areas F-2 and F-3.

All areas containing tailings remaining in-place were covered in accordance with the RD/RA (12 inches of clay and 6 inches of topsoil). This was generally limited to areas in the transition between the Embankment Wetland, State Route 248, the Rail Trail and islands of woody vegetation.

All wetland and upland areas were revegetated in accordance with the RD/RA.

2.2 Source Removal

Source removal work was conducted as specified in Section 6.0 of the RD/RA. The following work procedures were conducted:

- 1) Access roads or dikes were constructed into the Embankment Wetland as needed and removed prior to restoration. Access roads and dikes were constructed with clean material.
- 2) In order to conduct the removal, water in the Embankment Wetland had to be diverted in phases using a series of dikes and channels.
- 3) Excavation and construction areas were cleared and grubbed prior to the placement of materials. Clearing and grubbing included the removal of organic matter such as plants, trees and woody material, as well as any other material from the Site. Large non-organic materials such as boulders that interfered with grading were removed as required.

- 4) Appropriate dust control was conducted during all excavation, soil placement, transport and grading activities.
- 5) Where possible, excavation was conducted in an upstream to downstream direction. This excavation method was used to prevent the potential for cross-contamination. No air monitoring was conducted during sediment removal as all contaminated materials were saturated during removal. Air monitoring was conducted during grading of dry materials. Any overspill generated during haulage was picked up with a loader and placed either in a haul truck or transported by the loader to the impoundment.
- 6) Visible tailings materials were excavated from low-lying areas subject to year-round and/or seasonal ponding or interaction with shallow groundwater. Excavation extended to the visual interface between the tailings and native soils. Tailings excavation was guided via portable XRF. Excavation and transport was staged to avoid the re-contamination of clean areas.
- 7) Where contaminated material was placed in within F-2 and F-3 of the Impoundment, the material was graded to conform to general site topography prior to the placement of interim cover soils.
- 8) Surfaces and subgrades were graded to approximate final configurations and contours prior to cover and topsoil placement, if required. Subgrades and final graded surfaces were confirmed by conventional survey techniques where applicable.
- 9) Cover and topsoil from onsite stockpiles were used in 2011. Screening of these materials was conducted during importation and has been documented in previous TCRs.

- 10) Cover soils selected for use at the Site were low permeability, high clay content soils typical of those found in the region. Large rock material was avoided. Clay rich soils located on-site were used as cover material in accordance with the same criteria outlined in Section 6.1 of the RD/RA for quality control.
- 11) Cover soils placed at the Site were compacted with tracked or equivalent equipment. Compaction methods also included rolling and/or vibrating, as necessary. Cover soils were inspected and approved by United Park or its representatives prior to topsoil placement.
- 12) The final cover subgrade surface was uniform to allow for the placement of a consistent topsoil layer.

Note: Items 13 through 15 are referred to as General Topsoil Procedures.

- 13) Final surfaces, grades and erosion control structures were approved by United Park or its representative.
- 14) Topsoil was screened to remove particles greater than six inches and was suitable to support vegetation. Topsoil was placed to a minimum depth of six inches and contained sufficient organic matter and nutrients to promote revegetation.
- 15) The seedbed consisted of topsoil placed during remedial activities. Topsoil was lightly compacted and scarified. The seedbed was roughened prior to seeding.
- 16) Wetland construction in the Embankment Wetland consisted of additional grading and the construction of habitat features. Habitat features consisted of increasing the water edge by addition of small islands and scalloping the shoreline. Areas were over excavated into the shallow water table to provide additional aquatic habitat. Berms and dykes were used to create additional water ponding. Wetland construction is discussed further in Section 2.3.

- 17) Upland habitat was created adjacent to wetland areas in the Embankment Wetland by covering mine waste with at least eighteen inches and up to three feet of clay and topsoil. This was also conducted in transitional areas between the Embankment Wetland and features including State Route 248, the Rail Trail and habitat islands. Upland construction is further discussed in Section 2.4. Creation of upland habitat was conducted to provide additional compensation for potential Natural Resource Damages.
- 18) Seeding and related revegetation activities were completed on all remediated areas (upland and wetland).
- 19) The upland seed mix included a mixture of deep-rooted annual and perennial native grass and forb species. The annual species provide rapid germination to aid in short term revegetation. The short-term revegetation will decrease the runoff potential of the slope and will keep the imported soil in place. Perennial species will provide longer term, more stable revegetation. Wetland areas were revegetated with wetland specific species. Appendix C of the RD/RA contains the seed specifications for the Site.
- 20) Completion confirmation sampling is detailed in Section 4.0.

2.3 Cover Placement

Cover placement was conducted as specified in Section 6.0 of the RD/RA. The following work procedures were conducted:

- 1) Dust control measures were implemented during all excavation, soil placement, soil transport and grading activities as necessary. Water was applied to work surfaces and haul roads as dust control.

- 2) Surfaces and subgrades were graded to approximate final configurations and contours prior to cover and topsoil placement. Subgrades and final graded surfaces were confirmed by conventional survey techniques where applicable.
- 3) Cover and topsoil from onsite stockpiles were used in 2011. Screening of these materials was conducted during importation and has been documented in previous TCRs.
- 4) Cover soils selected for use at the Site were low permeability, high clay content soils typical of those found in the region. Large rock material was removed prior to placement. Clay rich soils from an on-Site stockpile were used as cover material using the same criteria outlined in Section 6.1 of the RD/RA and Section 2.2 of the Phase 5 FCP for quality control.
- 5) Cover soils placed at the Site were compacted with tracked or equivalent equipment. Compaction methods also included rolling and/or vibrating, as necessary. Cover soils were inspected and approved by United Park or its representatives prior to topsoil placement.
- 6) The final cover subgrade was graded to allow for the placement of a consistent topsoil layer, encourage vegetation growth and use by wetland wildlife species.
- 7) Final surfaces, grades and erosion control structures were approved by United Park or its representative.
- 8) Completion confirmation sampling is detailed in Section 4.0.
- 9) Topsoil was screened to remove particles greater than six inches and was suitable to support vegetation. Topsoil was placed to a minimum depth of six inches and contained sufficient organic matter and nutrients to promote revegetation.

- 10) The seedbed consisted of topsoil placed during remedial activities. Topsoil was lightly compacted and scarified. The seedbed was roughened prior to seeding.
- 11) Wetland construction consisted of additional grading and the construction of habitat features and transitional areas. Wetland construction consisted of adding shoreline, water ponding and deeper pools in the Embankment Wetland (Figure 1-1). This work was conducted to provide additional wetland habitat and to provide Natural Resource Damage offsets if any.
- 12) Seeding and related revegetation activities were completed on all remediated areas (upland and wetland).
- 13) The upland seed mix included a mixture of deep-rooted annual and perennial native grass and forb species. The annual species provide rapid germination to aid in short term revegetation. The short-term revegetation will decrease the runoff potential of the slope and will keep the imported soil in place. Perennial species will provide longer term, more stable revegetation. Wetland areas were revegetated with wetland specific species. Appendix C of the RD/RA contains the seed specifications for the Site.

2.4 Wetland Construction

Wetland construction in the Embankment Wetland area was conducted to provide additional wetland habitat and to provide compensation to any potential Natural Resource Damages. Up to date aerial photography is not available at this time to accurately portray the reconstruction of the Embankment Wetland however this may occur this fall or early spring of 2012. Constructed wetland features included:

- Habitat islands;
- Excavation and grading to provide open water habitat;
- Transitional shoreline areas;

- Deepened pools (>10 feet deep) to facilitate over wintering of fish species;
- Flow direction structures including dikes and swales;
- Topsoil placement; and
- Revegetation with wetland specific seed mix and plant species.

Seven habitat islands were created in the Embankment Wetland. Habitat island construction consisted of placing cover soil in areas of existing woody vegetation and new island features. The cover was placed without removing the woody vegetation. The woody vegetation will provide stock for propagation into source removal areas. The habitat island areas are presented on Figure 4-1. Cover soil was also placed to create shoreline habitat by merging the topography of habitat islands and wetland boundaries to the neighboring source removal areas.

The northeastern corner of the wetland in the vicinity of the Silver Creek channel was not remediated. This area is outside of the Study Area Boundary as presented in the RD/RA (RMC, 2007a). Contamination in this area will be addressed during Silver Creek remediation.

All wetland construction procedures were conducted in accordance with the procedures described in Section 2.2. All materials used in wetland construction meet the specifications described in Section 1.1.1 and Section 6.0 of the RD/RA.

2.5 Upland Construction

Upland construction was conducted in the transitional areas between the Embankment Wetland and the following features:

- State Route 248;
- Rail Trail; and
- Embankment and associated Wedge Buttress .

This work was conducted to provide additional upland habitat and to provide compensation to any potential Natural Resource Damages. Constructed upland features included:

- Upland habitat;
- Grading to provide upland habitat;
- Transitional upland areas;
- Topsoil placement; and
- Revegetation with upland specific seed mix and plant species.

All upland construction procedures were conducted in accordance with the procedures described in Section 2.2 and 2.3. All materials used in upland construction meet the specifications described in Section 1.1.1 and Section 6.0 of the RD/RA.

2.6 Channel Construction

The stream channel connecting the SDD terminus pond and the Embankment Wetland was reconstructed to facilitate migration of fish from Silver Creek into Richardson Flat. The channel was designed to accommodate flows of 26 cubic feet per second (cfs) at a velocity of 5.25 feet per second (fps) with a 2% grade and a 1-foot depth of flow. The channel was built with a semi-circular configuration to accommodate fish migration. Riprap was hand placed to avoid voids and compacted in place with a trackhoe to accommodate fish migration.

3.0 STORMWATER MANAGEMENT

Stormwater management was undertaken to:

- Reduce the potential for off-Site migration of sediments, soil and tailings; and
- Eliminate the re-contamination of areas that have been covered or have undergone source removal.

General stormwater management elements included:

- Sediment barriers and berms were placed in the Embankment Wetland to capture sediment and prevent downstream migration.
- Hay or straw bale barriers were placed in appropriate ephemeral channel features that drain from work areas. The hay bales were placed downgradient from the silt fence or wattle barriers;
- A supply of hay or straw bales and wattle material was stored on-site during construction; and
- Stormwater runoff protection measures will remain in-place until revegetation efforts are complete.

General procedures to reduce the tracking of contaminated materials into uncontaminated areas included:

- All trucks and equipment working in contaminated materials (e.g. tailings and sediments) were decontaminated prior to working with clean materials. Decontamination procedures are described in Section 11.8 of the RD/RA;
- A stabilized construction entrance was used to remove gross contamination from trucks hauling tailings;
- All trucks and equipment were decontaminated prior to leaving the Site; and
- Dust control measures were implemented as necessary as described in Section 11.1.1 of the RD/RA.

Specific stormwater runoff protection elements implemented prior to and during construction included:

- Work areas in the Embankment Wetland were isolated with a series of berms constructed from clean soil. Surface water was diverted and/or pumped from each area as required prior to and during excavation.

4.0 COMPLETION CONFIRMATION

Completion of work is based upon confirmation that the following Phase 5 2011 Construction Season Completion Milestones are complete:

- 1) Source removal is complete in the Embankment Wetland area;
- 2) Temporary Cover placement is complete in F-2 and F-3;
- 3) Reclamation (surface grading and drainage control) is complete;
- 4) Wetland construction is complete; and
- 5) Confirmation samples verify source removal and cover installation meets specifications.

4.1 Source Removal Confirmation

Source removal confirmation requirements are set forth in Sections 1.1 and 3.0 of the Field Sampling Plan (FSP, RMC, 2007c). Source removal confirmation samples were collected at twenty-three locations. Samples were analyzed via XRF. Two XRF-sampled confirmation samples were submitted to the laboratory for QA/QC analysis. Source removal confirmation results are presented in Table 1. QA/QC sample results are presented in Table 2. The sampling results meet applicable standards and requirements for source removal.

4.1.1 Embankment Wetland Area

Source removal in this area was confirmed using the following methodology:

- Confirmation sampling for lead and arsenic in upland areas.
- Confirmation sampling for lead in wetland areas.

Wetland areas were sampled on a 100-foot grid. Sample locations are presented on Figure 4-1. Source removal confirmation results are presented in Table 1.

As provided in the RD/RA, lead concentrations for source removal in the Embankment Wetland were set at 500 parts per million (ppm) for soils and 310 ppm for sediments. Average lead concentrations for the twenty-three source removal confirmation samples in the Embankment Wetland area were 43.1 ppm. Lead concentrations ranged from <32.8 to 126.2 ppm.

4.1.2 Surface Water Sampling

Seven surface water samples were collected to determine the effects of remediation on surface water quality. Sample results are presented in Table 4. Two samples were collected at the terminus of the South Diversion Ditch, below the pond completed in 2010. Total zinc ranged from 0.0126 to 0.0225 ppm. One sample was analyzed for dissolved zinc with a concentration of 0.0066 ppm. This sample was also analyzed for total and dissolved cadmium with concentrations below the laboratory detection limit of 0.000180 ppm. Four samples were collected from the Embankment Wetland after the removal of contaminated sediments. Total zinc in the Embankment Wetland samples ranged from 0.0351 to 0.101 ppm and dissolved zinc ranged from 0.0134 to 0.073 ppm. The results of all samples were significantly below the TMDL limits for the Silver Creek Watershed.

4.2 Cover Thickness Confirmation

As provided in the RD/RA, minimum depths for cover materials were to be confirmed by methods described in the FSP (RMC, 2007c). In accordance with these verification standards, the thickness of clean cover was measured at nine locations in the Embankment Wetland. Cover sample depths and XRF results are presented in Table 3. All cover sample XRF and laboratory analyses indicate that soil cover meets the

specifications of containing less than 310 ppm lead in wetland areas (24 samples) and less than 500 ppm lead and 100 ppm arsenic in upland areas (3 samples, location W3D).

The results indicate that cover placement is complete and all areas measured contain at least eighteen inches of cover as specified in the RD/RA and Phase 5 FCP.

4.3 Imported Soil Sampling

As provided in the RD/RA, imported soils were to be screened by using procedures described in the FSP (RMC, 2007c). During this construction season only previously sampled onsite cover soil and topsoil stockpiles were used. All topsoil and cover soils were screened during importation and the results of imported soil screening are documented in previous TCRs.

4.4 QA/QC Sampling

In accordance with the QA/QC Plan presented in the FSP (RMC, 2007c), two of twenty-three source removal and two of twenty-seven cover soil samples were submitted to American West Analytical Laboratories for XRF-Lab confirmation. Three duplicate laboratory samples were also submitted. This exceeds the five-percent QA/QC criteria specified in the FSP. The laboratory samples contained 30.9 to 403 ppm lead. Relative percent differences for XRF and laboratory results ranged from 7.6 to 127.5 percent for lead. The high RPD values are related to the non-homogeneous nature of soils and low metals concentrations in the soil samples analyzed (a small absolute difference at low concentrations will lead to a high RPD). QA/QC sample results are presented in Table 4.

Three duplicate soil samples were submitted to American West Analytical Laboratories for QA/QC purposes. Analytical laboratory lead concentrations ranged from 32.6 to 403 ppm. Relative percent differences for duplicate samples ranged from 1.5 to 131.9. The high RPD values are related to the non-homogeneous nature of soils and low metals

concentrations in the soil samples analyzed (a small absolute difference at low concentrations will lead to a high RPD). QA/QC sample results are presented in Table 4.

4.5 Air Monitoring

In accordance with Section 4.4.5 of the FSP (RMC, 2007c), four air samples were collected from site workers. Lead concentrations ranged from $<0.102 \text{ ug/m}^3$ to 0.254 ug/m^3 . Two of the four samples contained lead concentrations below laboratory detection limits, therefore an average was not calculated. These levels are significantly below the OSHA Action Level and PEL for lead of 30 ug/m^3 and 50 ug/m^3 , respectively. Four offsite ambient air samples were also collected upwind and downwind of the Site, in accordance with Section 4.4.5 of the FSP (RMC, 2007c). Lead concentrations ranged from $<0.093 \text{ ug/m}^3$ to $<0.143 \text{ ug/m}^3$. All samples contained lead concentrations below laboratory detection limits, therefore an average was not calculated. These levels are below the National Ambient Air Quality Standard for lead of 0.15 ug/m^3 .

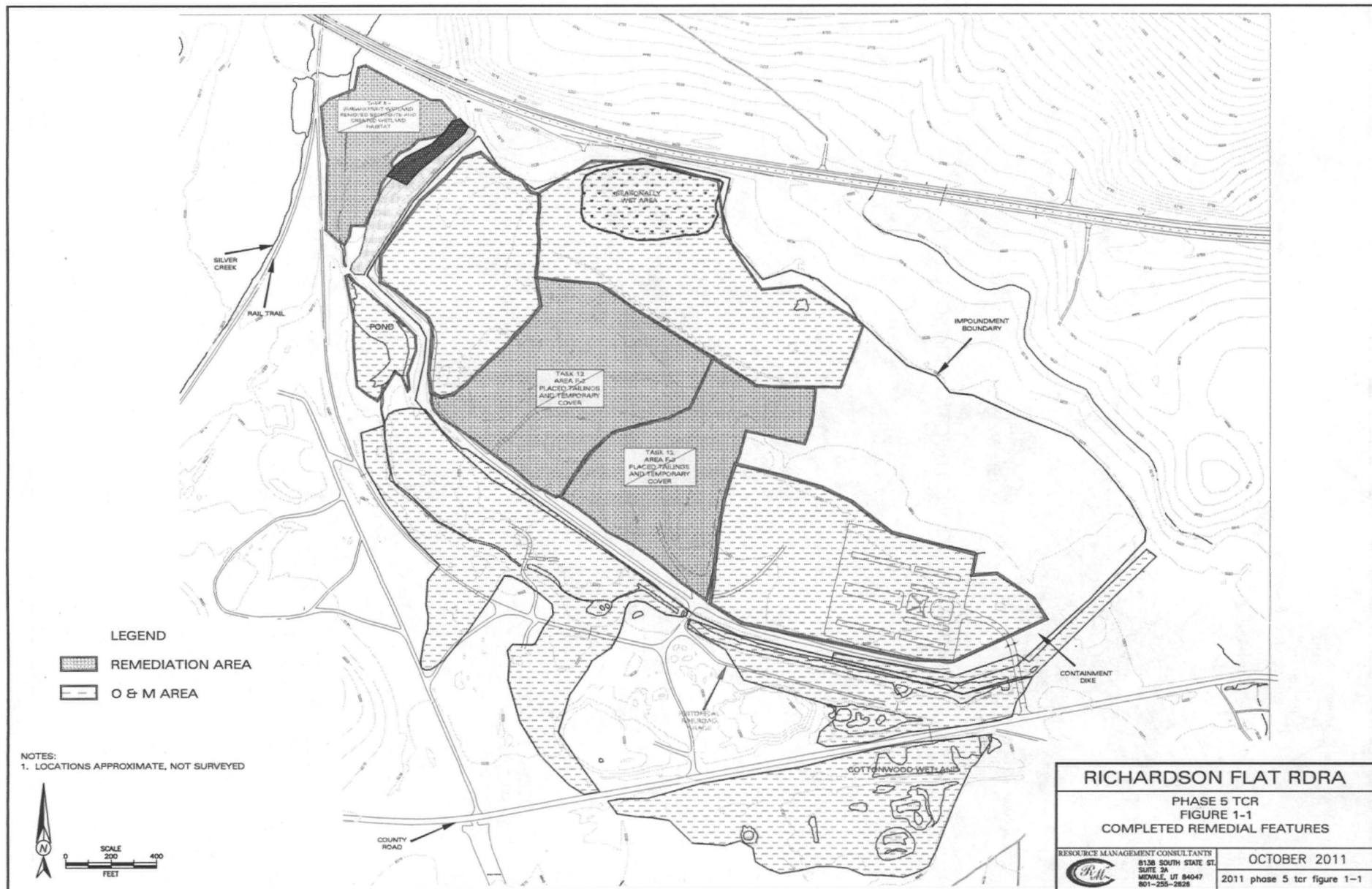
5.0 REFERENCES

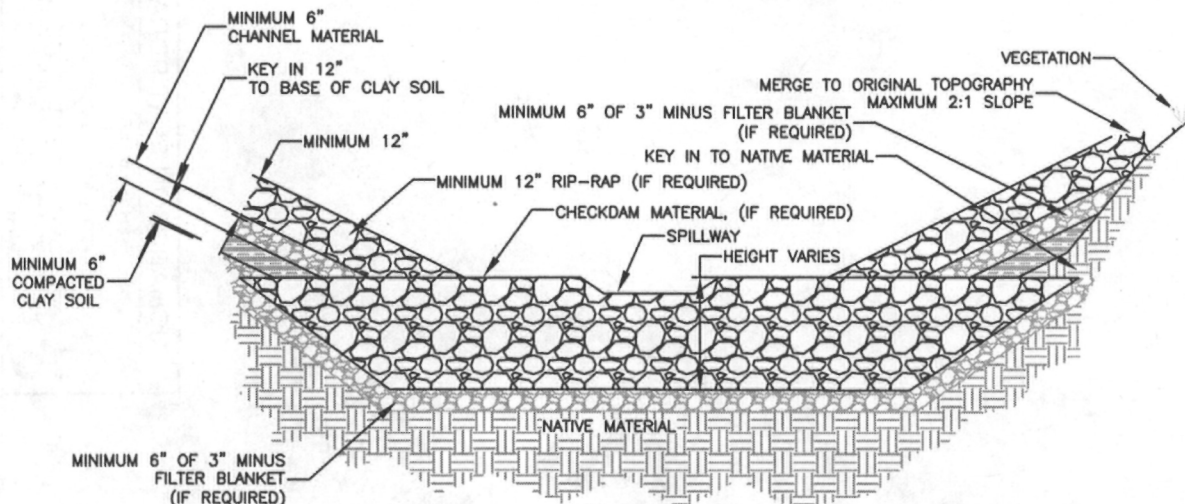
Resource Management Consultants, Inc (RMC), 2007a, Remedial Design/Remedial Action Plan (RD/RA), Richardson Flat, Site ID Number: UT980952840, With Attached Work Plan.

Resource Management Consultants, Inc (RMC), 2007b, Phase 2 Field Construction Plan for 2008 Construction Season, Richardson Flat, Site ID Number: UT980952840.

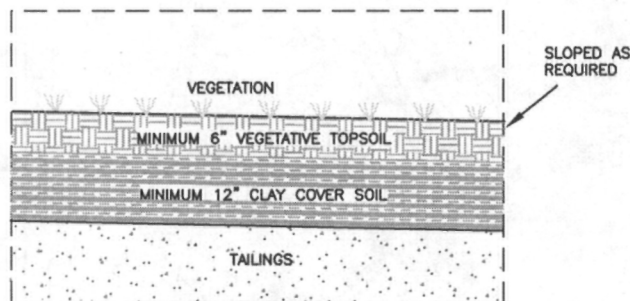
Resource Management Consultants, Inc (RMC), 2007c, Field Sampling Plan, Remedial Investigation, Richardson Flat, Site ID Number: UT980952840, With Attached Work Plan.

Resource Management Consultants, Inc (RMC), 2007c, Health and Safety Policy, Remedial Investigation, Richardson Flat, Site ID Number: UT980952840, With Attached Work Plan.

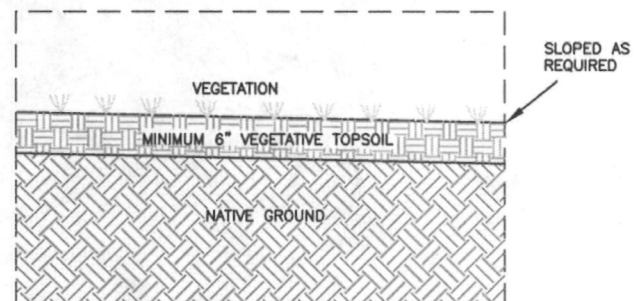




CHANNEL CONSTRUCTION TYPICAL DETAILS



COVER SOIL
TYPICAL DETAILS



TOPSOIL
TYPICAL DETAILS

NOT TO SCALE

RICHARDSON FLAT RDRA

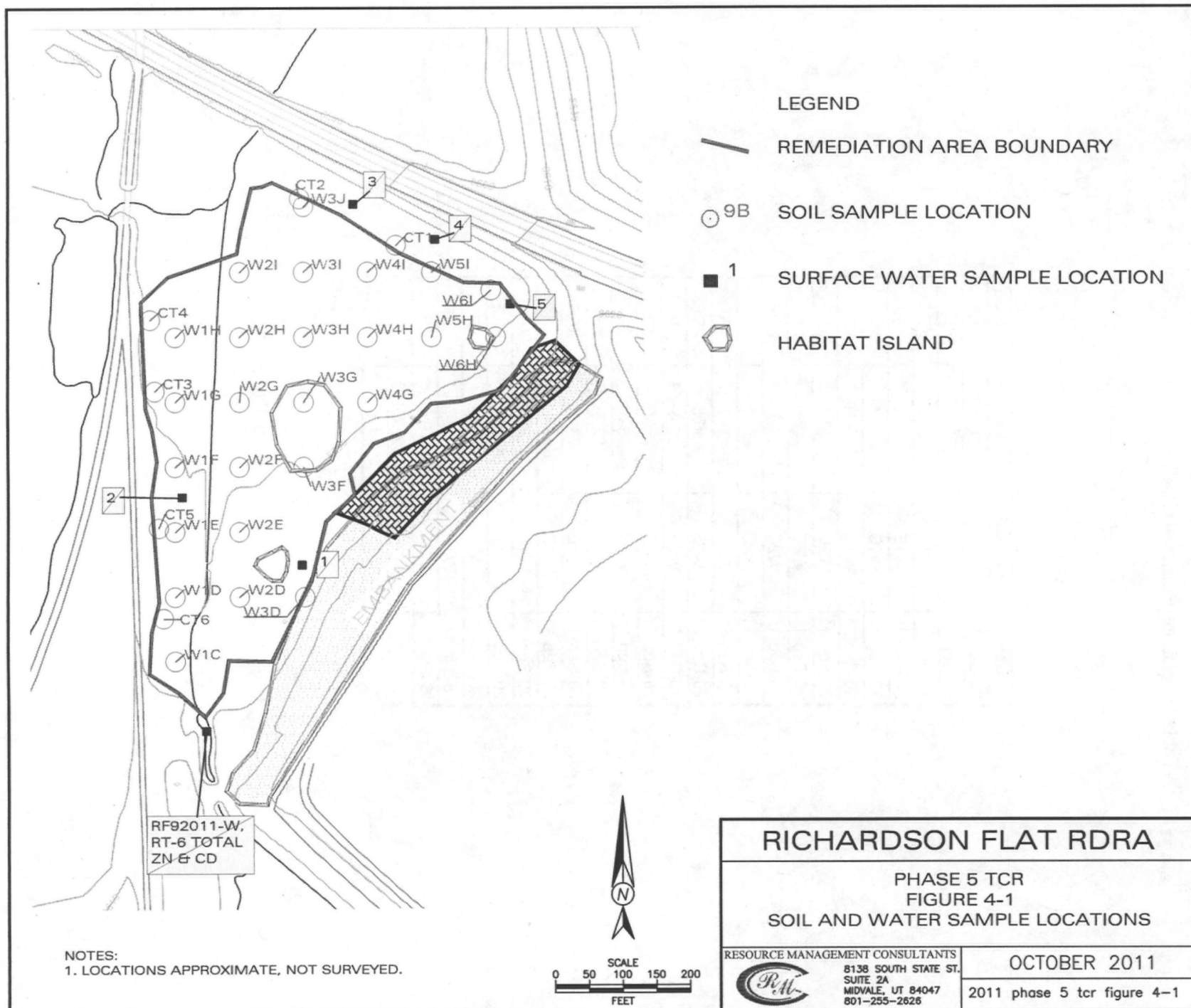
PHASE 5 FCP
FIGURE 2-1
CHANNEL AND SOIL COVER TYPICALS

RESOURCE MANAGEMENT CONSULTANTS
8138 SOUTH STATE ST.
SUITE 2A
MIDVALE, UT 84047
801-255-2626



OCTOBER 2011

phase 5 tcrf ig 2-1.dwg



Richardson Flat

Table 1 - Source Removal Confirmation Sample Results

All Results PPM

Date	Sample ID	Pb	Method
20-Sep-11	W1H	66.8	XRF
20-Sep-11	W1G	33.6	XRF
20-Sep-11	W1F	<36.5	XRF
20-Sep-11	W1E	<49.1	XRF
20-Sep-11	W1D	<33.1	XRF
20-Sep-11	W1C	<34.3	XRF
20-Sep-11	W2D	<60.5	XRF
20-Sep-11	W2E	<47.0	XRF
20-Sep-11	W2F	57.7	XRF
20-Sep-11	W2G	<39.1	XRF
20-Sep-11	W2H	<97.7	XRF
20-Sep-11	W2I	<36.8	XRF
20-Sep-11	W3J	50.4	XRF
20-Sep-11	W3I	<35.0	XRF
20-Sep-11	W3H	35.3	XRF
20-Sep-11	W3G	92.3	XRF
20-Sep-11	W3E	71.3	XRF
20-Sep-11	W4G	49.4	XRF
20-Sep-11	W4H	126.2	XRF
20-Sep-11	W5I	<32.4	XRF
20-Sep-11	W6I	<39.2	XRF
5-Oct-11	W5H	118.7	XRF
5-Oct-11	W4I	<39.6	XRF
Range:		<32.4-126.2	
Mean:		43.1	

Richardson Flat

Table 2 - QA/QC Sample Results

All results PPM

XRF-Lab Source Removal

Sample ID	Pb
WIE (XRF)	<49.1
WIE (LAB)	32.6
RPD (%)	NA

Sample ID	Pb
W3J (XRF)	50.4
W3J (LAB)	30.9
RPD (%)	48.0

XRF-LAB Cover Soils

Sample ID	As	Pb
CT4 18" (XRF)	BDL	<46.6
CT4 18" (LAB)	16.7	80.7
RPD (%)	NA	NA

Sample ID	As	Pb
W3D 12"(XRF)	BDL	89.2
W3D 12" (LAB)	<11.7	403
RPD (%)	NA	127.5

Sample ID	As	Pb
CT4 18" (XRF)	BDL	<46.6
CT504 18" (LAB)	16.8	76.7
RPD (%)	NA	NA

Sample ID	As	Pb
W3D 12"(XRF)	BDL	89.2
W503D 5012" (LAB)	<12.0	82.7
RPD (%)	NA	7.6

Duplicates Laboratory Analysis

Sample ID	Pb
WIE	32.6
50WIE	33.1
RPD (%)	1.5

Sample ID	As	Pb
W3D 12"	<11.7	403
W503D 5012"	<12.0	82.7
RPD (%)	NA	131.9

Sample ID	As	Pb
CT4 18"	16.7	80.7
CT504 18"	16.8	76.7
RPD (%)	0.6	5.1

BDL - Below Instrument Detection Limits
NA - Not Applicable

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Table 3 - Cover Depth Confirmation Sample Results

All Results PPM

Cover

Date	Sample ID	Sample Depth	Pb	As	Method
5-Oct-11	W6H	6"	73.2	BDL	XRF
		12"	120.8	BDL	XRF
		18"	137.9	BDL	XRF
5-Oct-11	CT1	6"	99.8	BDL	XRF
		12"	61.1	BDL	XRF
		18"	35.8	BDL	XRF
5-Oct-11	CT2	6"	99.3	BDL	XRF
		12"	<62.7	BDL	XRF
		18"	71	BDL	XRF
5-Oct-11	CT3	6"	45.7	BDL	XRF
		12"	107	BDL	XRF
		18"	<66.3	BDL	XRF
5-Oct-11	CT4	6"	113.9	BDL	XRF
		12"	80.3	BDL	XRF
		18"	<46.6	BDL	XRF
5-Oct-11	CT5	6"	<48.8	BDL	XRF
		12"	66.9	BDL	XRF
		18"	56.1	BDL	XRF
5-Oct-11	CT6	6"	78.7	BDL	XRF
		12"	82.3	BDL	XRF
		18"	61.2	BDL	XRF
5-Oct-11	W3D	6"	78.6	BDL	XRF
		12"	89.2	BDL	XRF
		18"	91.5	BDL	XRF
5-Oct-11	W3F	6"	85.4	BDL	XRF
		12"	61.8	BDL	XRF
		18"	74.4	BDL	XRF
		Range:	35.8-137.9		
		Mean:	73.5		

BDL - Below instrument detection limit

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Table 4 - Water Sample Results

All results PPM

SAMPLE ID	DATE	Cadmium (T)	Cadmium (D)	Zinc (T)	Zinc (D)	LOCATION NOTES
RF92011-W	20-Sep-11	-	-	0.0225	-	Terminus of the South Diversion Ditch at RF6-2.
RT-6 TOTAL ZN & CD	24-Aug-11	<0.000180	<0.000180	0.0126	0.0066	Terminus of the South Diversion Ditch at RF6-2.
1	18-Aug-11			0.0822	0.073	Embankment Wetland after source removal. See Figure 4-1 For location.
2	18-Aug-11	-	-	0.0397	0.0215	Embankment Wetland after source removal. See Figure 4-1 For location.
3	18-Aug-11	-	-	0.101	0.0555	Embankment Wetland after source removal. See Figure 4-1 For location.
4	18-Aug-11	-	-	0.0765	0.0606	Embankment Wetland after source removal. See Figure 4-1 For location.
5	18-Aug-11	-	-	0.0351	0.0134	Embankment Wetland after source removal. See Figure 4-1 For location.

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Table 5 - Air Monitoring Sample Results

DATE	SAMPLE ID	LEAD mg/Sample	LEAD ug/m ³	LEAD PEL (ug/m ³)	NAAQS (ug/m ³)	Air Volume L	NOTES
15-Sep-11	RF91511-1	< 0.000065	< 0.128	NA	0.15	508	Waste Stockpile
15-Sep-11	RF91511-2	0.000114	0.254	50	NA	448	Haul Truck - Personal Sample
15-Sep-11	RF91511-3	0.000087	0.194	50	NA	448	Trackhoe - Personal Sample
15-Sep-11	RF91511-4	< 0.000065	< 0.143	NA	0.15	454	Downwind Sample
20-Sep-11	RF92011-1	< 0.000065	< 0.094	50	NA	688	Trackhoe - Personal Sample
20-Sep-11	RF92011-2	< 0.000065	< 0.093	NA	0.15	700	Waste Stockpile
20-Sep-11	RF92011-3	< 0.000065	< 0.102	50	NA	640	Trackhoe - Personal Sample
20-Sep-11	RF92011-4	< 0.000065	< 0.112	NA	0.15	582	Downwind Sample

Definitions:

PEL - Permissible Exposure Limit. Permissible Exposure Limits are airborne concentrations of substances that workers may be exposed to by inhalation while they are at work. In theory, they represent conditions which it is believed that nearly all workers can be exposed day after day without adverse health effects.

Action Level - The Action Level is the exposure level at which OSHA regulations take effect. This is generally one-half of the PEL.

NAAQS - National Ambient Air Quality Standards. These are standards established by EPA that apply for ambient outdoor air throughout the country.

Appendix A
Analytical Laboratory Reports
(available upon request)